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II. Claims

1-16. Cancelled

17. (Previously Presented) A method of increasing the adherence of non-hardenable coating materials on ferrous materials comprising contacting the ferrous material with an aqueous mixture of the non-hardenable coating materials and a material which hardens in the presence of water thereby forming a coating film on the ferrous material surface.

18. (Previously Presented) The method of claim 17 wherein the material used to harden the coating film is selected from the group consisting of Portland cements, pozzolanic cements, aluminous cements and mixtures thereof.

19. (Previously Presented) The method of claim 18 wherein the cements have particle size distribution between 0.01 micrometer and 100 micrometers.

20. (Previously Presented) The method of claim 18 wherein the weight ratio of cement to ferrous material is between 1 to 40 and 1 to 5.

21. (Previously Presented) The method of claim 17, wherein the non-hardenable material used to coat the ferrous material surface is selected from the group consisting of bentonite clays, bauxite, aluminum containing clay and mixtures thereof.

22. (Previously Presented) The method of claim 21 wherein the non-hardenable material has particle size distribution between 0.01micrometer and 500 micrometers.

23. (Previously Presented) The method of claim 21 wherein the non-hardenable material has particle size distribution between 0.05 micrometer and 100 micrometers.

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24. (Previously Presented) The method of claim 21 wherein the non-hardenable material ranges from 0.01% by weight to approximately 2% by weight in relation to the dry weight of the ferrous material to be coated.

25. (Previously Presented) The method of claim 17, wherein the ferrous material is pellet, briquette, sized or fine ore.

26. (Previously Presented) The method of claim 17, wherein the sum of hardenable plus non-hardenable material in the water dispersion ranges from 1 to 80% by weight of the dispersion.

27. (Previously Presented) The method of claim 17, wherein the contacting is by means of dipping, spraying or sprinkling.

28. (Previously Presented) The method of claim 17, wherein the coat film hardening is achieved by the cure reaction of cement in air.

29. (Previously Presented) In a method of reducing the formation of agglomerates of ferrous materials during reduction of such materials by coating the ferrous materials with an aqueous dispersion of a non-hardenable coating, the improvement comprising concurrently coating the ferrous material with a material which hardens in the presence of water.

30. (Previously Presented) A coated ferrous material with significantly lower agglomeration formation during reduction produced by the process of claim 17.

31. (Previously Presented) A coated ferrous material with low agglomeration formation during reduction as compared to uncoated ferrous material where the coating comprises a mixture of a non-hardenable coating material and a hardened coating material.

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32. (Previously Presented) The ferrous material of claim 31 where the non-hardenable coating material is selected from the group consisting of bentonite clays, bauxite, aluminum containing clay and mixtures thereof and a hardened coating material is selected from the group consisting of Portland cements, pozzolanic cements, aluminous cements and mixtures thereof.

33. Cancelled

34. (New) A method of operating a direct reduction furnace with a reduction in the formation of agglomerates and increasing the adherence of non-hardenable coating materials on ferrous materials comprising contacting the ferrous material with an aqueous mixture of the non-hardenable coating materials and a material which hardens in the presence of water thereby forming a coating film on the ferrous material surface.

35. (New) The method of claim 34 wherein the material used to harden the coating film is selected from the group consisting of Portland cements, pozzolanic cements, aluminous cements and mixtures thereof.

36. (New) The method of claim 35 wherein the cements have particle size distribution between 0.01 micrometer and 100 micrometers.

37. (New) The method of claim 35 wherein the weight ratio of cement to ferrous material is between 1 to 40 and 1 to 5.

38. (New) The method of claim 34 wherein the non-hardenable material used to coat the ferrous material surface is selected from the group consisting of bentonite clays, bauxite, aluminum containing clay and mixtures thereof.

39. (New) The method of claim 38 wherein the non-hardenable material has particle size distribution between 0.01 micrometer and 500 micrometers.

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40. (New) The method of claim 38 wherein the non-hardenable material has particle size distribution between 0.05 micrometer and 100 micrometers.

41. (New) The method of claim 38 wherein the non-hardenable material ranges from 0.01% by weight to approximately 2% by weight in relation to the dry weight of the ferrous material to be coated.

42. (New) The method of claim 34, wherein the ferrous material is pellet, briquette, sized or fine ore.

43. (New) The method of claim 34, wherein the sum of hardenable plus non-hardenable material in the water dispersion ranges from 1 to 80% by weight of the dispersion.